

What is claimed is ;

- 5 1. A pressure sensor having a major technique signature of using only one resistor, wherein while measuring an external stress using the pressure sensor, an oscillating signal is received at an end of the resistor which is affected by the external stress, and consequently the affected resistor will have effect on the oscillating signal outputted from the other end of the resistor thereafter.
- 10 2. The pressure sensor of claim 1, wherein one end of the resistor is serial connected to an oscillating signal controller, and the other end of the resistor is serial connected to a capacitance which is ground connected, moreover, the oscillating signal controller along with the capacitance will generate the oscillating signal received by the resistor.
- 15 3. A pressure measuring apparatus, comprising:
a first resistor, having a first end and a second end; and
a pressure measuring circuitry, which generates a first oscillating signal between the first end and the second end of the first resistor;
20 wherein the first resistor is affected by an external stress and outputs a first oscillating signal corresponding to the variation of the external stress at the second end of the first resistor, and therefore the pressure measuring circuitry will be able to measure the magnitude of the external stress basing on the variation of the
25 the first oscillating signal.
- 30 4. The pressure measuring apparatus of claim 3, wherein the pressure measuring circuitry further comprising:
a capacitance, having a first end and a second end, wherein the first end of the capacitance is coupled to the first end of the first resistor on a node, and the second end of the capacitance is ground connected; and

an oscillating signal controller, having a first input terminal and a second input terminal, wherein the first input terminal of the oscillating signal controller is coupled to the second end of the first resistor;

5 wherein the oscillating signal controller along with the capacitance will generates the first oscillating signal at the place between the first end and the second end of the first resistor.

5. The pressure measuring apparatus of claim 4, wherein the pressure measuring circuitry further comprising:

10 a second resistor, having a first end coupled to the node and a second end coupled to the second input terminal of the oscillating signal controller, that the second resistor will not be affected by the external stress, moreover, the oscillating signal controller along with the capacitance will generate a second oscillating
15 signal between the first end and the second end of the second resistor, and the second oscillating signal is not going to be affected by the variation of external stress;

a numerical converter, which receives and compares the first oscillating signal and the second oscillating signal both
20 transmitted from the oscillating signal controller so as to output a data signal thereafter;

a display controller, which receives and outputs the data signal outputted from the numerical converter;

25 a monitor, which receives and displays the data signal coming from the display controller;

a human-machine interface, controlled by a user to issue a control signal; and

30 a system oscillator, which receives the control signal so as to generate a series of system oscillating signals sent to the oscillating signal controller, the numerical converter and the display controller.

6. The pressure measuring apparatus of claim 5, wherein the first

resistor and the second resistor possess the same resistor values.

7. The pressure measuring apparatus of claim 6, further comprising:

a plurality of the second resistors, respectively having a first end coupled to the node and a second end coupled to the second input terminal of the oscillating signal controller.

8. A pressure measuring apparatus, comprising:

a first resistor, having a first end and a second end;

a capacitance, having a first end and a second end, wherein the first end of the capacitance is coupled to the first end of the first resistor on a node, and the second end of the capacitance is ground connected;

a second resistor, having a first end and a second end, wherein the first end is coupled to the node;

an oscillating signal controller, having a first input terminal and a second input terminal, wherein the first input terminal of the oscillating signal controller is coupled to the second end of the first resistor and the second input terminal of the oscillating signal controller is coupled to the second end of the second resistor, moreover, the oscillating signal controller along with the capacitance will generates the first oscillating signal at the place between the first end and the second end of the first resistor and a second oscillating signal at the place between the first end and the second end of the second resistor, thus, the first resistor affected by an external stress outputs the first oscillating signal affected by the variation of the external stress from the second end of the first resistor, and the unaffected second resistor outputs the second oscillating signal unaffected by the variation of the external stress from the second end of the second resistor;

a numerical converter, which receives and compares the first oscillating signal and the second oscillating signal both outputted by the oscillating signal controller so as to output a data signal thereafter;

a display controller, which receives and outputs the data signal outputted from the numerical converter;

a monitor, which receives and displays the data signal coming from the display controller;

5 a human-machine interface, controlled by a user to issue a control signal; and

10 a system oscillator, which receives the control signal so as to generate a series of system oscillating signals sent to the oscillating signal controller, the numerical converter and the display controller.

9. The pressure measuring apparatus of claim 8, further comprising:

a plurality of the second resistors, respectively having a first end coupled to the node and a second end coupled to the second input terminal of the oscillating signal controller.

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